

Five New Species of *Terebra* from the Eastern Pacific

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(Plate 44)

IN EXAMINING the numerous specimens of West American Terebridae made available to us during the past two years, we have encountered several species which have not been previously described. These species have been seen with some frequency in several of the larger institutional collections as well as in private collections.

Terebra species from West America, in several instances, exhibit variations in shell characteristics which make identification very difficult unless a long series of comparison specimens is available, and good protoconchs are a desirable aid in separating species which have somewhat similar shell characteristics.

Abbreviations have been used for a number of the institutional collections cited here; these, along with the location of the private collections cited, are as follows:

- AHF – Allan Hancock Foundation (Material on loan to the Los Angeles County Museum of Natural History)
- AMNH – American Museum of Natural History
- ANSP – Academy of Natural Sciences of Philadelphia
- B & B – Bratcher and Burch Collection, Los Angeles, California
- BM(NH) – British Museum (Natural History)
- CAS – California Academy of Sciences
- DMNH – Delaware Museum of Natural History
- Frisbey – Jeanne Frisbey Collection, Port Isabell, Texas
- LACM – Los Angeles County Museum of Natural History
- SBMNH – Santa Barbara Museum of Natural History
- SDMNH – San Diego Museum of Natural History

- Shy – Laura Shy Collection, Westminster, California
- SU – The Conchological Collection of Stanford University
- Thomas – Lawrence Thomas Collection, Morro Bay, California
- USNM – United States National Museum
- YPM – Yale University Peabody Museum of Natural History

Terebra shyana BRATCHER & BURCH, spec. nov.

(Plate 44, Figures 9, 10)

Description: Size medium, slender; color dark buff with darker fulvous blotches; whorls slightly convex with noded subsutural band set off by well marked suture and subsutural groove; nucleus of 3 glassy slender whorls; early sculpture of numerous slightly curved axial ribs which are equal to their interspaces and of evenly spaced spiral cords (4 on 3rd postnuclear whorl) which cross the ribs faintly; ribs continuous from suture to suture with subsutural groove forming elongate nodes on band; in later whorls axial ribs become slightly narrower than interspaces, spiral cords crossing ribs form slight nodes giving a cancellate appearance, and spiral cords are more numerous (6 on penultimate whorl) and less evenly spaced; body whorl of average length with noded axial ribs continuing to periphery and fading out posterior to keel of siphonal fasciole; aperture semi-elongate; outer lip thin with color blotches showing through; columella curved with a slight plication, moderately laminated; siphonal fasciole striate with sharp posterior keel; anterior

canal broad and long; length 26.0 mm; diameter 5.6 mm; 14 whorls plus nucleus.

Holotype: LACM, Type Collection no. 1249.

Type locality: All specimens of the type material were collected at Manzanillo, Colima, Mexico, 19°02' N Lat., 104°21' W Long.; 17 - 40 fathoms; by Laura Shy and Jeanne Frisbey.

Paratypes: Paratypes are deposited in the following collections: CAS, Department of Geology, Type Collection no. 13280; SU Conchological Collection no. 9992; USNM no. 679481; Shy; Frisbey; B & B no. 742.

Other material examined: In addition to two lots of type material, we have examined 9 lots of this species: CAS no. 27581 from near Santa Isabel Island, Gulf of California; AHF no. 1031-40 from Santa Maria Bay, outer coast of Baja California; AHF no. 765-38 from Chacaua Bay, Mexico, at 5 - 10 fathoms; AHF no. 1753-49 from north of Coyote Point, Gulf of California; AHF no. 273-34 from Tenacatita Bay, Mexico, at 45 fathoms; AMNH no. 88725 from the Gorda Banks, Gulf of California; AMNH nos. 77796 and 77826 from Coronados Islands, Gulf of California, Mexico.

Largest specimen examined: length 36.1 mm; diameter 7.5 mm.

Discussion: Specimens vary in the number of axial ribs and spiral cords. One of the largest specimens examined has ribs much narrower than the interspaces and only 4 rows of unevenly spaced spiral cords which cross the ribs without producing a cancellate appearance. The largest specimen appears cancellate from the first postnuclear whorl through the body whorl.

Terebra shyana resembles several other *Terebra* species which occur in the Indo-Pacific and Panamic regions. It can be separated from *T. panamensis* DALL, 1908, by the latter's heavier, more cancellate sculpture and less conspicuous subsutural band, while *T. turrita* E. A. SMITH, 1873, of Australia, *T. serotina* ADAMS & REEVE, from Japan and the Philippine Islands, and *T. textilis* HINDS, 1844, of the Indo-Pacific, may be distinguished from *T. shyana* by their more cancellate sculpture, flatter whorls, protoconchs and style of columella. Another Panamic *Terebra*, the description of which is presently in press, has a rather close superficial resemblance to *T. shyana*, therefore a close examination of this species is desirable, especially of the protoconch and of the spiral sculpture anterior to the periphery of the body whorl.

This species is named in honor of Mr. and Mrs. Carl Shy of Westminster, California, for their having collected the first specimens of this species which came to our atten-

tion and for their generosity in having made their large collection of specimens available for study.

Terebra brandi BRATCHER & BURCH, spec. nov.

(Plate 44, Figures 5, 6)

Description: Size medium small, slender; color bluish gray; whorls slightly convex with moderately convex subsutural band marked by impressed suture and subsutural groove which crosses axial ribs after the 4th postnuclear whorl; nucleus of 4 dark brown, shiny, smooth whorls; sculpture consistent throughout except that subsutural band becomes discernible after 4th postnuclear whorl; axial sculpture of slightly curved ribs narrower than interspaces on both whorl and band; spiral sculpture of rows of evenly spaced spiral grooves which do not cross axial ribs, 6 on penultimate whorl, 3 on subsutural band; body whorl of medium length with axial ribs ending at periphery and interspaces divided by 7 rows of spiral grooves; anterior to periphery 7 unevenly spaced spiral grooves extend to siphonal fasciole; aperture moderately elongate; outer lip thin; columella brown with slight curve, very faint plication, light lamination; siphonal fasciole striated with posterior keel; anterior canal moderately long, curved, medium width; length 16.9 mm, diameter 3.9 mm; 10 whorls plus nucleus.

Holotype: LACM - AHF, Type Collection no. 1252.

Type locality: Petatlan Bay, Mexico, 17°31' N Lat., 101°27' W Long.; Allan Hancock Pacific Expedition collecting station 265-34; 5 - 10 fathoms on hard sand and shell bottom.

Paratypes: One paratype; LACM - AHF, Type Collection no. 1253; very poor condition.

Other material examined: In addition to the type lot, AHF 702-37 from Angeles Bay, Baja California, Mexico, at 18 fathoms; Shy Collection from Manzanillo, Mexico, 7 - 8 fathoms; AHF 584-26 from Conception Bay, Baja California, Mexico, intertidal; Frisbey Collection from Manzanillo, Mexico, 15 - 40 fathoms; LACM Hill Collection from Bay of Dulce, Mexico; AHF 763-38 from Cape Corrientos, Mexico, 5 - 10 fathoms; LACM no. B-16 from Taboga Island, Panama, 5 fathoms; USNM 566896 from Mazatlan, Mexico; USNM 426749 from Peru; B & B no. 273 from Panama Bay, Panama, intertidal.

Except for the type lot and one other, each of which contains 2 specimens, all lots examined were of one specimen each.

Largest specimen examined: USNM 566896; length 24.1 mm; diameter 4.6 mm.

Discussion: The variation exhibited among the specimens examined is confined to the color, which may be lavender gray, bluish gray or beige gray.

Several species of Panamic *Terebra* somewhat resemble *T. brandi* in sculpture. *Terebra berryi* CAMPBELL, 1961, has a larger apical angle, more convex whorls with a depressed subsutural band, a more pronounced and numerous spiral sculpture and different style of color and color pattern; while *T. churea* CAMPBELL, 1964, has a shorter protoconch, more pronounced subsutural band and more numerous spiral sculpture than *T. brandi*. The western Atlantic Ocean and Gulf of Mexico species, *T. protexta* (CONRAD, 1848), and *T. glossema* SCHWENGEL, 1940 and 1942, have some sculptural resemblance but may be separated by their axial ribs which continue anterior to the periphery of the body whorl and by their columellas which are more curved or twisted than the slightly curved columella of *T. brandi*.

This species is named for Dr. Louis M. Brand of Houston, Texas, in recognition of his generous assistance and early encouragement of our study of the Terebridae.

Terebra dorothyae BRATCHER & BURCH, spec. nov.

(Plate 44, Figures 7, 8)

Description: Size medium; color brown, with portions of subsutural band and nodes slightly lighter; early whorls somewhat convex and later whorls almost flat, with moderately convex subsutural band marked by impressed suture and broad shallow subsutural groove; nucleus partially missing; first postnuclear whorl glassy with slightly curved axial ribs narrower than interspaces; next 4 postnuclear whorls with ribs extending from node on subsutural band to following suture; in later whorls, nodes on band become elongate with ribs on remainder of whorl broken into nodes by spiral grooves, 5 on penultimate whorl; body whorl long, with 2 rows of spiral nodes wide-set and 3 rows, smaller and closer together, posterior to periphery; anterior to lighter band of color at periphery, 3 rows of cords form small nodes where they cross axial ribs, followed by 3 rows of cords which do not form nodes; aperture elongate; outer lip thin with light peripheral band and pattern of nodes showing through; columella slightly curved with no plication; siphonal fasciole heavy, striated, with exceptionally large posterior keel; anterior canal broad; length 29.9 mm; diameter 6.5 mm; 11 whorls plus portion of nucleus.

Holotype: LACM – AHF, Type Collection no. 1250.

Type locality: AHF Pacific Expedition collecting stations

770-38 and 929-39; near San Jose, Guatemala; 13°53' N Lat., 91°09' W Long.

Paratypes: LACM – AHF, Type Collection no. 1251; CAS, Department of Geology, Type Collection no. 13281; SU Conchological Collection no. 9993; SBMNH, Type Collection no. 27141; SDMNH, Type Collection no. 51249; AMNH no. 154674; USNM no. 679482; YPM no. 12-15635; BM(NH); DMNH no. 22421; ANSP no. 316223.

Other material examined: AHF 762-28 from inner Gorda Bank, Gulf of California, Mexico, 60 fathoms; CAS 35006 from coast of Michoacan, Mexico; Shy Collection from Santiago Bay, Manzanillo, Mexico, 7 - 8 fathoms; Frisbey Collection from Manzanillo, Mexico, 15 - 40 fathoms; LA CM Hill Collection from Panama Bay, Panama; LACM no. A5498 from the Galápagos Islands.

Largest specimen examined: LACM no. A5498; length 36.0 mm, diameter 7.7 mm; nucleus missing.

Discussion: This species exhibits little variation among the specimens examined. In some specimens the light color band at the periphery of the body whorl and the lighter subsutural band are very distinct while in other specimens these features are almost non-existent. In occasional specimens the axial ribs and spiral cords crossing them are conspicuous, while in others only the nodes are evident.

Terebra dorothyae has little resemblance to other species of *Terebra*; however, some variations of other species should be considered in making identifications. The Japanese species, *T. pustulosa* E. A. SMITH, 1879 (= *T. granulosa* E. A. SMITH, 1873, not LAMARCK, 1822) has a weakly but broadly impressed subsutural groove and fewer rows of nodes than are found in *T. dorothyae*. Of the Panamic species which exhibit rows of spiral nodes, *T. tuberculosa* HINDS, 1844, is a broader and heavier shell with more conspicuous subsutural band and fewer rows of spiral nodes, while *T. cracilenta* LI, 1930, also has a broader apical angle and heavier shell with more pronounced subsutural band and nodulous sculpture than *T. dorothyae*. Both *T. roperi* PILSBRY & LOWE, 1932, and *T. adairensis* CAMPBELL, 1964, are slender species, as is *T. dorothyae*, but each of these has only 2 rows of nodes on each whorl, one posterior and one anterior to the suture. *Terebra glauca* HINDS, 1844, might also be compared, although this species is consistently broader, less uniformly noded or colored, and the columella more slanted than is found in specimens of *T. dorothyae*.

This species is named in honor of Mrs. Dorothy Brown of San Diego, California, in recognition of her generosity in making specimens available for study and of her interest in conchology.

Terebra allyni BRATCHER & BURCH, spec. nov.

(Plate 44, Figures 1, 2, 3, 4)

Description: Size medium; color beige mottled with rust brown; whorls flat with slightly convex subsutural band set off by suture and shallow subsutural groove; nucleus of $1\frac{1}{2}$ dome shaped glassy whorls; first 2 postnuclear whorls translucent with almost straight ribs about equal to interspaces and no noticeable subsutural band or spiral sculpture; in next 6 whorls ribs become more widely spaced, starting as small elongate nodes on subsutural band, and wide but feeble spiral cords develop which do not cross ribs; after 6th postnuclear whorl wide spiral cords, though inconspicuous, cross ribs forming rounded nodes, 4 rows on penultimate whorl; fine axial striae form between rows of nodes and cross subsutural band; body whorl of average length with 4 rows of nodes, the anterior being at the periphery, followed anteriorly by a broad shallow groove and 4 rows of smaller nodes; anterior to periphery spiral sculpture becomes finer, more numerous, and continues to keel of siphonal fasciole as do axial striae; aperture elongate; outer lip sturdy; columella straight with no plication, thinly laminated; siphonal fasciole striated with posterior keel lacking in strength; outer canal straight, broad; length 25.8 mm; diameter 6.3 mm; 12 whorls plus nucleus.

Holotype: CAS, Department of Geology, Type Collection no. 13278.

Type locality: CAS station 23779, east shore of Maria Madre Island, Tres Marias Group, 21°35' N Lat., 106°26' W Long.; 5 to 10 fathoms.

Paratypes: CAS Type Collection no. 13279; LACM Type Collection no. 1254; SBMNH Type Collection no. 27142; SU Conchological Collection no. 9995; SDMNH Type Collection no. 51248; USNM no. 679534; AMNH no. 154675; ANSP no. 316224; DMNH Type Collection no. 22421; BM(NH); B & B Collection no. 743.

Other material examined: In addition to the type lot of 61 specimens, many of which are immature, we have examined 2 specimens, CAS 29894, Margarita Island, Lower California, Mexico; 3 specimens, CAS 23810, Espíritu Santo Island, Gulf of California; 1 specimen AMNH 74171, Maria Madre Island, Tres Marias Group, Puritan Expedition; 1 specimen, AMNH, San Juanito Island, Tres Marias Group, Puritan Expedition; 1 specimen, LACM 66-8, Santa Margarita Island, intertidal to 6 feet; 15 specimens, LACM 65-16, Banderas Bay, Jalisco, Mexico, 10 - 15 fathoms; USNM 564817, Santa Inez Bay, Gulf of California.

Largest specimen examined: LACM 65-16; length 39.1 mm; diameter 8.8 mm.

Discussion: The smaller lots of specimens examined, which contain 1 or 2 specimens each, have only 1 row of spiral nodes at the periphery of the body whorl (Plate 44, Figures 3 and 4). These sharply rounded nodes are formed on axial ribs which fade completely at the posterior as well as the anterior portion of the whorl. This variation in sculpture is the only form we have seen from several of the collecting stations, although occasionally it is found among specimens which contain more sculpture. The rows of spiral nodes vary from 0 in some specimens to 4 in others examined. Occasional individual specimens are more slender than others, and some have a more convex subsutural band with larger nodes. The color varies little among specimens examined, with the exception of lot LACM 65-16 which is light grayish brown with rust colored blotches between the nodes of the subsutural band.

Several species of Indo-Pacific and Panamic *Terebra* have a superficial resemblance to *T. allyni* with *T. specillata* HINDS, 1844, resembling the more sculptured form. *Terebra specillata* has a more cancellate sculpture with more prominent subsutural band and consistent heavy sculpture through all whorls than *T. allyni*. The less sculptured forms of *T. allyni* resemble *T. conspersa* HINDS, 1844, but the latter has numerous incised interstitial spiral

Explanation of Plate 44

Figure 1: *Terebra allyni* BRATCHER & BURCH, spec. nov. Holotype
CAS no. 13278 $\times 3\frac{1}{2}$

Figure 2: *Terebra allyni*. Hypotype, CAS no. 13279; nucleus

Figure 3: *Terebra allyni*. Hypotype, CAS no. 13279; variation of
sculpture $\times 3$

Figure 4: *Terebra allyni*, dorsal view of same shell as in Figure 3

Figure 5: *Terebra brandi* BRATCHER & BURCH, spec. nov. Holotype
LACM - AHF no. 1252 $\times 3\frac{1}{2}$

Figure 6: *Terebra brandi*, nucleus of same shell as in Figure 5

Figure 7: *Terebra dorothyae* BRATCHER & BURCH, spec. nov. Holotype
LACM - AHF no. 1250 $\times 3$

Figure 8: *Terebra dorothyae*. Paratype LACM - AHF no. 1251
Nucleus

Figure 9: *Terebra shyana* BRATCHER & BURCH, spec. nov. Holotype
LACM - AHF no. 1249 $\times 3$

Figure 10: *Terebra shyana*, nucleus of same shell as in Figure 9

Figure 11: *Terebra hancocki* BRATCHER & BURCH, spec. nov. Holotype
LACM - AHF no. 1255 $\times 1\frac{1}{2}$

Figure 12: *Terebra hancocki*. Hypotype LACM no. 65-23; nucleus



Figure 1



Figure 2



Figure 3



Figure 4

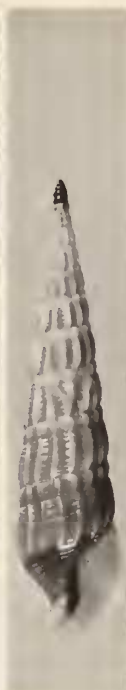


Figure 5

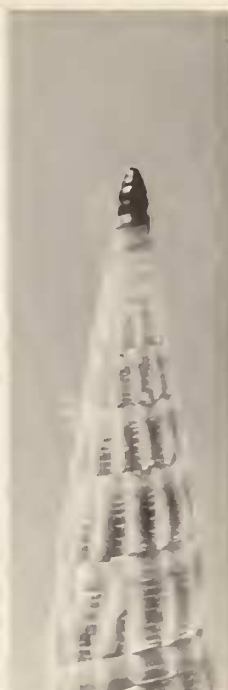


Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11

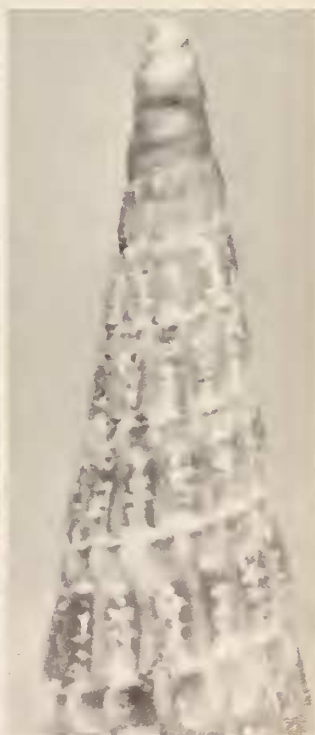


Figure 12

